Critical Care Therapy and Respiratory Care Section

Category:	Clinical
Section:	Special Procedures
Title:	Temporary Pacemaker Assist
Policy #:	04
Revised:	03/00

1.0. DESCRIPTION

1.1 Definition: A cardiac pacemaker is a device designed to deliver direct electrical stimulation to the heart producing electrical depolarization and cardiac contraction. The management of potentially life-threatening dysrhythmias and conduction disturbances requires the placement of a temporary pacemaker until definitive treatment can be instituted. Temporary pacemakers may be either external, as in transcutaneous pacing, or internal, as in transvenous pacing. Internal cardiac pacing is accomplished by passing electrodes transvenously, and then positioning the electrodes so that they are in contact with the endocardium within the right ventricular apex. This procedure will describe the therapist's role in placement of a transvenously placed temporary pacemaker.

1.2 Indications:

1.2.1 Symptomatic sinus bradycardia - hypotension with syncope or presyncope.

1.2.2 Symptomatic sinus node dysfunction - arrest, bradycardia, or sinoatrial block.

1.2.3 Atrioventricular node dysfunction - second degree or third degree block (selected cases).

1.2.4 Bundle of His-Purkinje dysfunction - Mobitz type II block, third degree block, or bifascicular block (selected cases).

1.2.5 Tachyarrhythmia control - conversion of atrial tachycardia or flutter, overdrive of tachycardia with a ventricular focus, or suppression of ventricular ectopy.

1.2.6 Prophylaxis - right heart catheterization in the presence of left bundle branch block (selected cases), cardioversion in the presence

of known sick sinus syndrome, acute anterior myocardial infarction with a new onset of bifascicular block, or infusion of therapeutic agents known to interfere with normal conduction.

1.3 Complications:

1.3.1 Cardiac perforation

1.3.2 Malignant ventricular dysrhythmias

1.3.3 New pericardial friction rub

1.3.4 Complications related to vascular access and introducer placement, e.g., bleeding and trauma to the vessel

1.4 Precautions: Important precautions for the insertion and maintenance of a transvenously placed pacing wire include the acquisition of appropriate emergency supplies such as emergency airway equipment and materials, a defibrillator, oxygen, a cardiorespiratory monitor, and pulse oximeter. Additionally, a pneumothorax kit and pericardiocentesis tray should be immediately available in case of complications due to vascular access or cardiac perforation.

1.5 Adverse Reactions and Interventions

1.5.1 In the event that the pacemaker generator fails to pace, sense, or senses improperly, notify the physician who may reposition or replace the pacing catheter or replace the generator's battery.

1.5.2 The therapist should be prepared to assist the physician as necessary to remedy complications of transvenous pacer placement as they occur. Responsibilities include retrieval of supplies, assistance with emergent chest tube placement or pericardiocentesis, and participation in life support measures.

2.0 EQUIPMENT AND SUPPLIES

2.1 Five or seven French bipolar transvenous pacing wire.

2.2 Introducer tray of one French size larger than the pacing wire.

2.3 Pulse generator and connecting cables.

2.4 Mobile fluoroscopy unit and appropriate radiation shielding devices.

2.5 Sterile drapes, 4x4s, and betadine.

2.6 Sterile gown and gloves, hair cover, mask, and goggles for operator.

2.7 Universal precautions attire for all other personnel.

3.0 PROCEDURE

3.1 Gather supplies and position the fluoroscopy unit at the bedside for viewing of the left chest.

3.2 Assist the physician with the introducer placement. Nursing will provide the flush solution for the introducer.

3.3 Assist the physician as directed with placement of the ventricular pacing probe including with operation of the fluoroscopy unit. Assist nursing with proper setting of the pulse generator including accessing the PACED mode on the cardiorespiratory monitor and obtaining an EKG tracing.

4.0 POST PROCEDURE

4.1 Be certain that appropriate heart rate alarms are set on the cardiorespiratory monitor.

4.2 Remove all soiled and disposable equipment from the bedside. Clean and store the fluoroscopy unit.

5.0 REFERENCES

5.1 Wiener I, Conover MB. Pacemakers. In: Cardiovascular procedures: diagnostic techniques and therapeutic procedures. Tilkian & Daily, eds. St. Louis: The CV Mosby Co., 1986.

5.2 CCTRCS Procedure for Use of the Siemens Siremobil Fluoroscopy Unit

SIGNATURE:_____ DATE:_____
Assistant Section Chief, CCTRCS, CCMD

SIGNATURE:_____ DATE:_____
Section Chief, CCTRCS CCMD

SIGNATURE:_____ DATE:_____
Medical Director, CCTRCS CCMD

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